Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Sensible Medical Innovations	)	ET Docket No. 18-39
Request for Waiver of Part 15 of the	)	
Commission's Rules Applicable to	)	
Ultra-Wideband Devices	)	

REPLY COMMENTS OF GLOBALSTAR, INC.

Globalstar, Inc. ("Globalstar") hereby replies to comments on Sensible Medical Innovations Ltd.'s ("SMI's") Request for Waiver of certain Federal Communications Commission ("Commission") rules regulating ultra-wideband ("UWB") medical imaging devices.[1] Given its licensed mobile satellite service ("MSS") operations at 1.6 GHz, Globalstar echoes concerns raised by other parties in this proceeding regarding the proposed operation of SMI's planned devices. Before acting on the Waiver Request, the Commission should require SMI to submit a more detailed technical showing demonstrating that its UWB devices will not cause harmful interference to licensed services above 1 GHz, including Globalstar's MSS offerings. If SMI submits a more detailed showing that justifies a grant of its request, the Commission should apply certain common-sense conditions to ensure that Globalstar MSS and other licensed operations remain protected from interference.

In its request, SMI seeks waiver of certain technical provisions in Part 15 of the Commission's rules in order to permit the operation of a "stepped-frequency UWB medical

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[1] *See* Sensible Medical Innovations Request for Waiver, ET Docket No. 18-39, at 1 (Jan. 16, 2018) ("Waiver Request") (seeking waiver of 47 C.F.R. §§ 15.31(c), 15.503(d), 15.513(a), 15.521(d), and 15.525); *Office of Engineering and Technology Seeks Comment on Sensible Medical Innovations Ltd's Request for Waiver of Part 15 Ultra-Wideband Rules for a Medical Imaging System*, ET Docket No. 18-39, Public Notice, DA 18-131 (rel. Feb. 9, 2018) ("*Public Notice*").

monitoring device" that it calls the "ReDS" system.[2] The ReDS system utilizes UWB technology to transmit on frequencies between 1005 MHz and 1709 MHz and provide "accurate lung fluid measurements for congestive heart failure patients in a non-invasive way."[3] According to SMI, the ReDS system could meaningfully improve patient care and outcomes by accurately measuring the lung fluid content of patients suffering from congestive heart failure.[4]

While Globalstar certainly appreciates the potential benefits from SMI's new UWB devices, it agrees with commenters that the Commission should not waive its Part 15 rules without first determining the impact that the unlicensed ReDS system will have on other licensed services.[5] Significantly, the burden falls on SMI to demonstrate that there is "good cause" for a grant of its request[6] and to show that operation of its proposed device "will avoid creating interference" to Commission-licensed services.[7] A leading provider of global mobile satellite voice and data services, Globalstar is licensed for uplink transmissions (*i.e.*, mobile earth stations to satellites) in the Lower Big LEO band at 1610-1618.725 MHz, within the frequency range of SMI's proposed UWB ReDS system.[8] Accordingly, SMI must demonstrate that its unlicensed

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2 Waiver Request at 1.

3 Public Notice at 1.

4 Waiver Request at 2-3.

5 *See* Comments of Iridium Communications Inc. at 2 ("Iridium Comments") ("Iridium has closely reviewed [SMI]'s filing and asks that action on [SMI]'s Waiver Request be deferred until the information identified . . . has been provided."); Comments of the GPS Innovation Alliance at 1 ("GPSIA Comments") ("GPSIA suggests additional areas where the Commission should seek information from SMI before it proceeds."). (Unless otherwise indicated, all comments cited herein were filed in ET Docket No. 18-39 on March 12, 2018.)

6 GPSIA Comments at 3, 47 C.F.R. § 1.3; *see also* 47 C.F.R. § 1.925.

7 GPSIA Comments at 4.

8 *See Application of Loral/Qualcomm Partnership, L.P. for Authority to Construct, Launch, and Operate Globalstar, a Low Earth Orbit Satellite System, to Provide Mobile Satellite Services in the 1610-1626.5 MHz/2483.5-2500 MHz Bands*, Order and Authorization, 10 FCC

ReDS system can operate across the 1.6 GHz band without causing harmful interference to Globalstar's licensed MSS network, which provides safety-of-life services to consumers, businesses, and public safety users throughout the United States.

SMI has so far failed to meet this standard in this waiver proceeding, and it must address the shortcomings in its technical showing before the Commission can consider granting SMI's request. As GPSIA indicates in its comments, in order to provide a complete record, SMI must "provide a full technical description of its product, including specific frequency steps, and the procedures and results of appropriate emissions testing."[9] Specifically, to demonstrate that there will be no harmful interference to licensed services, SMI's supplemental technical showing should include (1) a list of the specific frequencies that SMI proposes to use for its ReDS system,[10] (2) the length of time the ReDS system will operate on each individual frequency,[11] (3) a description of how many "sweeps" are required to obtain a single lung fluid content

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Rcd 2333, ¶ 1 (1995); *see also Spectrum and Service Rules for Ancillary Terrestrial Components in the 1.6/2.4 GHz Big LEO Bands; Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems in the 1.6/2.4 GHz Bands*, Second Order on Reconsideration, Second Report and Order, and Notice of Proposed Rulemaking, 22 FCC Rcd 19733, ¶¶ 8, 18-20 (2007). Globalstar is licensed for downlink transmissions (satellites to mobile earth stations) in the Upper Big LEO band at 2483.5-2500 MHz.

9 GPSIA Comments at 7.

10 *Id*. at 5 ("[W]ithout a complete list of the proposed frequencies, neither the Commission nor GPSIA is able to determine whether the operation of this device would cause significant interference to GPS users in the vicinity of a ReDS device."); Iridium Comments at 2-3 ("Iridium requests that [SMI] be required to provide a list of the specific frequencies it proposes to use during its sweeps.").

11 Iridium Comments at 3 ("Iridium asks that [SMI] be required to clarify how long the ReDS system will operate on individual frequencies.").

measurement,[12] and (4) any specific technical data from emissions tests that better describe the ReDS system's power levels, attenuation, and other signal characteristics.[13]

If SMI submits the necessary technical information and demonstrates that the ReDS system will not cause harmful interference to licensed services, the Commission should issue a waiver subject to common-sense conditions referenced by commenters on SMI's request. Among other things, these proposed conditions would require the ReDS system to operate with stepped frequency modulation in sixteen steps between 1005 MHz and 1709 MHz and would limit UWB operations "to body imaging measurement functions . . . only when the patient is actively being monitored."[14] These conditions will constitute a further safeguard against harmful interference to licensed operations between 1005 MHz and 1709 MHz.

Respectfully submitted,

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12 *Id.* ("Iridium asks that [SMI] be required to clarify . . . how many sweeps are required to obtain a single lung fluid content measurement.").

13 GPSIA Comments at 6 ("SMI should be required to clarify what, if any, emissions testing it has performed, and should submit into the public record the detailed results of any such tests for the review of the Commission and other stakeholders.").

14 Iridium Comments at 5-6 (also requesting a condition that "dwell time on any one frequency shall not exceed 4 milliseconds in any 85 millisecond period").